OK

WEST RIDGE RESOURCES, INC
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Fax Received @ 10:29 AM

FAX

Compliance ✓
C/007/041
Copy NOV file

Date Apr 30, 2002

To: Pamela Grubaugh-Littig, DOGM

From: Dave Shaver

Pages: 16, including cover

Subject: Abatement
NOV N02-49-1-1

Pam: Please call me if you have questions or comments

Hard copies are in the mails !!

Thanks,
Dave

WEST RIDGE RESOURCES,INC

P.O. BOX 902
PRICE, UTAH 84501
PHONE (435) 637-5385
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Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Re: NOV Abatement N02-49-1-1
West Ridge Mine
C/007/041-AM02A
Carbon County, Utah

Dear Pam,

Enclosed is the information requested in the T/A dated April 8, 2002. All revised pages should be inserted in Appendix 7-4. A C_1/C_2 Form is also enclosed.

It should be noted that the requirement to design ditches for a 10 year - 24 hour event has been discussed with Mr. Dan Guy, Registered Engineer. According to Mr. Guy, the 10 year - 24 hour requirement for ditches was replaced by a 10 year - 6 hour requirement with the regulation re-write over 10 years ago. He has worked with numerous mines and permits in Utah, and is not aware of any new permits in the past 10 years that have been mandated to use the 10 year - 24 hour criteria for ditch design. On occasion, an operator will voluntarily use the larger design for safety reasons; however, it has always been with the intent that maintenance requirements be according to the 10 year - 6 hour event as required by regulation. In fact, the 24 hour event is not even mentioned in the diversion section of the regulations - R645-301-742.300.

Sincerely,

Michael Glasson

Form DOGM - C1 (Last Revised April 30, 2002) File Folder # 3

APPLICATION FOR PERMIT PROCESSING

Permit Change X	New Permit ☐	Renewal ☐	Transfer ☐	Exploration ☐	Bond Release ☐	Permit Number: C/007/041
Title of Proposal: NOV Abatement						Mine: WEST RIDGE MINE
						Permittee: WEST RIDGE RES.

Description, Include reason for application and timing required to implement:

Instructions: *If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation*

☐ Yes	X No	1. Change in the size of the Permit Area? ____ acres Disturbed Area? ____ acres ☐ Increase ☐ decrease
☐ Yes	X No	2. Is the application submitted as a result of a Division Order? DO #
☐ Yes	X No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes	X No	4. Does application include operations in hydrologic basins other than as currently approved?
☐ Yes	X No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes	X No	6. Does the application require or include public notice/publication?
☐ Yes	X No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes	X No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
X Yes	☐ No	9. Is the application submitted as a result of a Violation? NOV # N-02-49-1-1
☐ Yes	X No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: Request by Division.
☐ Yes	X No	11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes	X No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P27)
☐ Yes	X No	13. Does the application require or include collection and reporting of any baseline information?
☐ Yes	X No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes	X No	15. Does application require or include soil removal, storage or placement?
☐ Yes	X No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes	X No	17. Does the application require or include construction, modification, or removal of surface facilities?
X Yes	☐ No	18. Does the application require or include water monitoring, sediment or drainage control measures?
X Yes	☐ No	19. Does the application require or include certified designs, maps, or calculations?
☐ Yes	X No	20. Does the application require or include subsidence control or monitoring?
☐ Yes	X No	21. Have reclamation costs for bonding been provided for?
☐ Yes	X No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes	X No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

X Attach 3 complete copies of the application.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations herein.

Signed - Name - Position - Date

Subscribed and sworn to before me this 30 day of April, A.D. 2002

Notary Public

My Commission Expires: 1-7-2006

Attest: STATE OF Ut
COUNTY OF Carbon

WENDE L. JACOBSON
NOTARY PUBLIC - STATE of UTAH
821 CASTLE GATE CIRCLE
HELPER, UTAH 84526
COMM. EXP. 1-7-2006

Received by Oil, Gas & Mining

ASSIGNED TRACKING NUMBER

Application for Permit Processing
Detailed Schedule of Changes to the MRP

Title of Application:

NOV Abatement

Permit Number: C/007/041

Mine: WEST RIDGE MINE

Permittee: WEST RIDGE RES.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed
permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	X REPLACE	☐ REMOVE	Pages 3, 5 & 10 in Appendix 7-4
☐ ADD	X REPLACE	☐ REMOVE	Pages 30 through 33 in Appendix 7-4
☐ ADD	X REPLACE	☐ REMOVE	Figures 3 and 4 in Appendix 7-4
☐ ADD	X REPLACE	☐ REMOVE	Ditch Calculations for DD-6 in Appendix 7-4
☐ ADD	☐ REPLACE	☐ REMOVE	
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Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

APPENDIX 7-4

WEST RIDGE MINE
SEDIMENTATION AND DRAINAGE CONTROL PLAN
(AS CONSTRUCTED)

PREPARED BY: DAN W. GUY, P.E.
BLACKHAWK ENGINEERING, INC.

Design Parameters

2.1 Precipitation

The precipitation-frequency values for the area were taken from "NOAA, Precipitation-Frequency Atlas of the Western U.S., Atlas 2, Volume VI.

Frequency - Duration	Precipitation
2 year - 6 hour	0.82"
10 year - 6 hour	1.30"
10 year - 24 hour	2.00"
25 year - 6 hour	1.60"
25 year - 24 hour	2.40
100 year - 6 hour	2.00"
50 year - 24 hour	2.60"

Disturbed ditch and culvert designs for runoff control are based on the 10 year - 6 hour event of 1.30" and the 25 year - 6 hour event of 1.60", where required. Undisturbed culvert designs are based on the 10 year - 24 hour event of 2.00".

It should be noted that all hydrologic structures are constructed larger than the minimum design requirements, as an added safety measure. Maintenance requirements, however, are expected to be for the 10 year - 6 hour event as required by regulation.

The sedimentation pond is designed to contain the runoff from a 10 year - 24 hour event of 2.00" as required by the Division. Reclamation designs are based on the 100 year - 6 hour event of 2.00", where applicable for permanent structures.

ASCA areas are sized to contain or treat runoff from a 10 year - 24 hour precipitation event.

2.3 Velocity

Flow velocities for each ditch structure were calculated using the Storm computer program with Manning's Formula:

$$V = \frac{1.49}{n} R^{2/3} S^{1/2}$$

where:

- **V = Velocity (fps)**
- **R = Hydraulic Radius (ft.)**
- **S = Slope (ft. per ft.)**
- **n = Manning's n; Table 3.1, p.159,**

"Applied Hydrology and Sedimentology for Disturbed Areas", Barfield, Warner & Haan, 1983.

Note: The following Manning's n were used in the calculations:

Structure	Manning's n
Culverts (cmp)	0.020
Rip-rapped or Natural Drainage Channels	0.035
Unlined Disturbed Area Ditches	0.035
Concrete or Bedrock Channels	0.015

2.4 Drainage Areas

All drainage areas were planimetered directly from As-Constructed Maps 7-1 (Drainage Area Map) and 7-2 (Minesite Drainage Plan).

2.5 Slopes, Lengths

All slopes and hydraulic lengths were measured directly from the topography on Maps 7-1 and 7-2.

All disturbed area culverts are temporary, and will be removed upon final reclamation.

2.10 Ditches

Ditches are shown on the Minesite Drainage Plan, Map 7-2, and are designated with a DD-number (i.e., DD-1) for Disturbed Area Ditches or a UD-Letter (i.e., UD-X) for Undisturbed Area Ditches.

Disturbed drainage areas, along with some undisturbed drainage areas, report to disturbed drainage area ditches with the corresponding subscript number; for example, disturbed drainage area DA-3 (along with undisturbed drainage area UA-3) reports to disturbed drainage area ditch DD-3.

All ditches are designed to carry the expected runoff from a 10 year - 6 hour event with a minimum freeboard of 0.5' (See Figures 3 and 4). The 0.5' freeboard represents a minimum of 20% of the flow depth in all disturbed area ditches.

Ditches which exhibit expected flow velocities of 5 fps or greater based on the 10 year - 6 hour runoff, will be lined with rip-rap or concrete or constructed on bedrock. Typical cross-sections, flow depths and areas for all lined and unlined ditches are shown on Figures 3 and 4 of this report.

It should be noted that only 2 ditches exhibit flows in excess of 5 fps based on a 1-year - 6 hour event. These are ditches DD-6 and DD-8A. DD-6 is constructed on bedrock, has been in place for 3 years, and shows no sign of eroding into the bedrock. Although the bedrock is in the ditch bottom, there are no plans to further line the ditch since erosion is not occurring. DD-8A has been rip-rapped in accordance with the plan.

Ditch slopes have been determined from Map 7-2.

All ditches will be inspected regularly, and maintained to the minimum dimensions for the required 10 year - 6 hour runoff to provide adequate capacity for the design flow. All ditches are temporary and will be removed as described under the reclamation hydrology section. (Section 4)

TABLE 12
DISTURBED DITCH DATA

Area ID	Hydraulic Length	High Elevation	Low Elevation	Change Elevation	Slope %	Runoff CN	Manning's No.
DD-1	323.70	7102	7075	27	8.3	90	0.035
DD-2	258.90	7075	7068	7	2.7	90	0.035
DD-3	977.50	7112	7068	44	4.5	90	0.035
DD-4	763.00	7068	7020	48	6.3	90	0.035
DD-4A	210.50	7044	7038	6	2.9	90	0.035
DD-5	190.00	7024	7021	3	1.6	90	0.035
DD-6	189.30	7020	7008	12	6.3	90	0.015
DD-8	268.90	7038	7008	30	11.2	90	0.035
DD-8A	207.90	7006	6988	18	8.7	90	0.035
DD-9	445.80	7002	6974	28	6.3	90	0.035
DD-10	88.00	6992	6990	2	2.0	90	0.035
DD-11	242.80	6966	6962	4	1.6	90	0.035
DD-12	428.20	6968	6950	18	4.2	90	0.035
DD-13	422.30	6971	6964	7	1.7	90	0.035

TABLE 13
DISTURBED DITCH DESIGN SUMMARY

Ditch Structure	DD-1	DD-2	DD-3	DD-4	DD-4A
10 yr - 6 hr event (in.)	1.30	1.30	1.30	1.30	1.30
Peak Flow (cfs)	1.79	3.22	1.18	5.08	0.69
Velocity (fps)	4.26	3.24	3.05	4.99	2.26
Required Area (ft^2)	0.42	0.99	0.39	1.02	0.30
Flow Depth (ft.)	0.46	0.70	0.44	0.71	0.39
10 yr - 24 hr event (in.)	2.00	2.00	2.00	2.00	2.00
Peak Flow (cfs)	7.13	12.52	4.30	18.32	1.56
Velocity (fps)	6.02	4.55	4.22	6.88	2.78
Required Area (ft^2)	1.18	2.75	1.02	2.66	0.56
Flow Depth (ft.)	0.77	1.17	0.71	1.15	0.53
Maintenance					
Minimum Area (ft^2)	1.84	2.88	1.77	2.93	1.58
Minimum Depth (ft.)	0.96	1.20	0.94	1.21	0.89
*Lining/Bedrock Y/N	N	N	N	N	N

*** Based on 10 year - 6 hour flow.**

TABLE 13 (Continued)
DISTURBED DITCH DESIGN SUMMARY

Ditch Structure	DD-5	DD-6	DD-8	DD-8A	DD-9
10 yr - 6 hr event (in.)	1.30	1.30	1.30	1.30	1.30
Peak Flow (cfs)	1.26	6.62	0.68	7.30	1.26
Velocity (fps)	2.11	10.06	3.74	6.17	3.52
Required Area (ft^2)	0.60	0.66	0.18	1.18	0.36
Flow Depth (ft.)	0.55	0.57	0.30	0.77	0.42
10 yr - 24 hr event (in.)	2.00	2.00	2.00	2.00	2.00
Peak Flow (cfs)	2.81	21.74	1.69	23.43	2.86
Velocity (fps)	2.57	13.55	4.70	8.25	4.32
Required Area (ft^2)	1.09	1.60	0.36	2.84	0.66
Flow Depth (ft.)	0.74	0.90	0.42	1.19	0.58
Maintenance					
Minimum Area (ft^2)	2.21	2.29	1.28	3.23	1.69
Minimum Depth (ft.)	1.05	1.07	0.80	1.27	0.92
*Lining/Bedrock Y/N	N	**Y	N	Y	N
Rip-Rap D_{50}	-	-	-	4"	-

*** Based on 10 year - 6 hour flow.**

**** On Bedrock.**

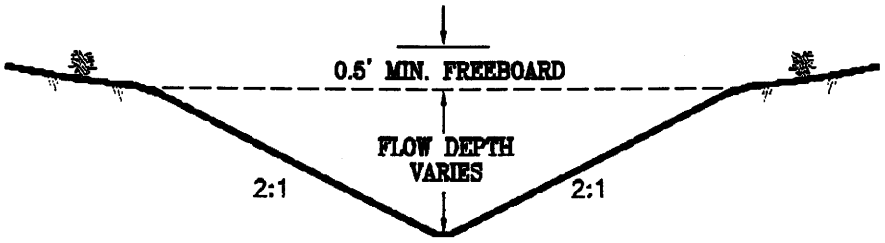
TABLE 13 (Continued)
DISTURBED DITCH DESIGN SUMMARY

Ditch Structure	DD-10	DD-11	DD-12	DD-13
10 yr - 6 hr event (in.)	1.30	1.30	1.30	1.30
Peak Flow (cfs)	2.58	7.58	4.11	0.28
Velocity (fps)	2.74	3.30	4.07	1.48
Required Area (ft^2)	0.94	2.30	1.01	0.19
Flow Depth (ft.)	0.69	1.07	0.71	0.31
10 yr - 24 hr event (in.)	2.00	2.00	2.00	2.00
Peak Flow (cfs)	7.44	24.05	13.51	0.61
Velocity (fps)	3.57	4.40	5.47	1.80
Required Area (ft^2)	2.08	5.46	2.47	0.34
Flow Depth (ft.)	1.02	1.65	1.11	0.41
Maintenance				
Minimum Area (ft^2)	2.83	4.93	2.93	1.31
Minimum Depth (ft.)	1.19	1.57	1.21	0.81
*Lining/Bedrock Y/N	N	N	N	N

*** Based on 10 year - 6 hour flow.**

UNDISTURBED AND DISTURBED DITCH TYPICAL SECTION

(UNLINED DITCH)



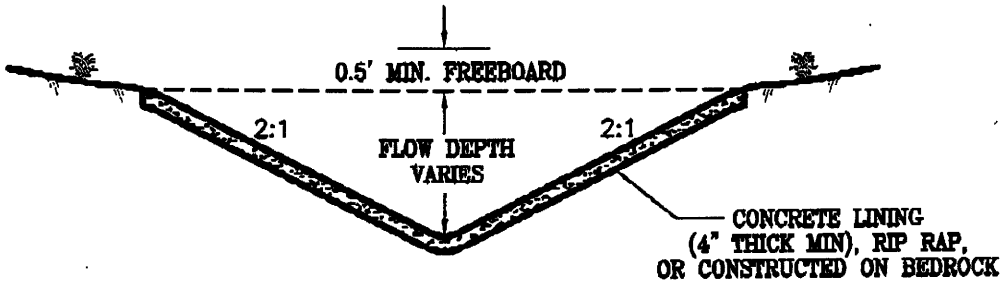
UNLINED DITCH		
DITCH	FLOW DEPTH	FLOW AREA (FT.^{2})
UD-Z	0.24	0.11
UD-15	0.38	0.29
DD-1	0.46	0.42
DD-2	0.70	0.99
DD-3	0.44	0.39
DD-4	0.71	1.02
DD-4A	0.39	0.30
DD-5	0.55	0.60
DD-8	0.30	0.18
DD-9	0.42	0.36
DD-10	0.69	0.94
DD-11	1.07	2.30
DD-12	0.71	1.01
DD-13	0.31	0.19

Note: Flows based on a 10 year – 6 hour event.

FIGURE 3

UNDISTURBED AND DISTURBED DITCH TYPICAL SECTION

(LINED DITCH)



LINED DITCH		
DITCH	FLOW DEPTH	FLOW AREA ($FT.^2$)
DD-6	0.57	0.66
DD-8A	0.77	1.18

Note: Flows based on a 10 year – 6 hour event.

FIGURE 4

Title of run: DD-6 (10/6)

Solving for	Depth Normal

Triangle

Flow depth (ft)	0.57
First Side slope	2.0
Second Side slope	2.0
Slope of diversion	0.0630
Manning"s n	0.015
CFS	6.62
Cross section area (sqft)	0.66
Hydrualic radius	0.26
fps	10.06
Froude number	3.50

Title of run: DD-6 (10/24)

Solving for	Depth Normal

Triangle

Flow depth (ft)	0.90
First Side slope	2.0
Second Side slope	2.0
Slope of diversion	0.0630
Manning"s n	0.015
CFS	21.74
Cross section area (sqft)	1.60
Hydrualic radius	0.40
fps	13.55
Froude number	3.77